Impact of Perceived Risk on Adoption of Online Payment system: moderating role of Motivation

A

Synopsis

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1. Introduction

The demonetization policy of 2016 had created a significant rise in the usage of online payments systems in India. There is a three-fold increase in online payments in India which is 207% from October 2016; number of digital transactions that took place in august 2018 was recorded at 244.80cr since demonetization (Ministry of Electronics and Information Technology, 2019). The growth in the internet has created a popularity of online shopping among the consumers and allows the consumers to pay for the products and services electronically. The electronic payment system is designed to provide convenience to the consumers and lower their transactions cost. This web-based user interface allows customers to access and manage their transactions remotely. Online payments are the more suited and convenient to the customers for making payments as compared to the traditional payment form i.e. Cash. Electronic payment (e-payment) has become a popular means today for paying for online purchases made. The growth of internet has facilitated the popularity of this payment instrument as electronic commerce (e-commerce) has created new financial needs that in many cases cannot effectively fulfilled by traditional payment systems (Sumanjeet, 2009).With the explosive growth of online businesses and ecommerce stores, there are more than 300 payment schemes in the world. The global e-commerce market is also expected to hit 2.4 trillion dollars by 2019 (securion pay).online payments are faster, cheaper and easier than any other payments methods.

The major concern with regard to e-payments is security. Still many people don't shop online because they had a fear of losing their money by fraudulent activities. They perceived some risks while using or before using online payments. Research conducted on the impact of perceived risk on consumer decision-making in using online transaction activities revealed that customers are less motivated to adopt new payment methods when they perceive that the risk of adopting them is greater than old ways of payment (Jarvenpaa et al., 2000). The customers who chooses to pay online could face a threats like fraud, theft of personal information or card details, hacking, password stealing. So the decision of consumer to pay online or not is influenced by perceived risk. A recent FIS (Fidelity National Information Services) study showed that online payment frauds in India have doubled in the last year, from 18% to over 37%.

Compared to the traditional retail form, (Lee and Tan, 2003) pointed out that when consumers shop online, they tend to perceive higher risks. Perceived risk associated to the payment systems is believed to be one of the contributing factors to the low adoption rate. E-Payment system in India has shown tremendous growth, but still 90% of the transactions are cash based, there is a need to do lot to increase its usage and widen the scope of electronic payment.(Roy & Sinha, 2014).

A consumer looks for some benefits or motivation when they forego for the adoption of new technologies. Shopping researcher has demonstrated that consumers are motivated by utilitarian factors, including efficiency and cost, (Babin et al., 1994; Kim, 2006) but also by the desire to satisfy hedonic needs, such as affect, social interaction and/or entertainment (Arnold and Reynolds, 2003). Dhar and Wertenbroch (2000) study the influence of utilitarian and hedonic motivations to the decision-making behavior of consumers. Both utilitarian and hedonic shopping motivations may be important to consumers' purchasing and loyalty habits in online and traditional formats.(Kelley C. Anderson, 2014).

In this study, the researcher proposes to measure the effect of determinants of consumer perceived risk on the adoption of online payment system. When potential users transact online, the users may feel that they are having fun and enjoying challenging activities, which is an intrinsic characteristic, and thus they may be inherently motivated to trust it and use it as an alternative payment to cash and credit cards (Rouibah, Lowry, & Hwang, 2016). As highlighted in the previous research, the hedonic motivation i.e. perceived enjoyment taken as an independent variable in the online payment studies. So, it become imperative to probe the role of hedonic motivation and utilitarian motivation, as a moderator in the study. To establish the likely effect of motivation in influencing the risk factors affecting the consumers decisions to adopt online payment system.

2. Literature Review

This section covers the brief summary of literature on the topic. The review is divided in to paper content and synthesized literature review. The paper content further classified in to online payment system, perceived risk and their dimensions along with Hedonic motivation and Utilitarian motivation.

2.1. Online payment system

The term Electronic Payment was first used by IBM's marketing and Internet team in 1996(Amor, 1999). Electronic payment systems refer to various innovative applications and approaches including the use of credit card, debit card, Automated Teller Machine(ATM), Electronic Fund Transfer(EFT), online payment that are used to facilitate customer's decision to pay for a product or services (Vassilious,2004). Shon and Swatman (1998) define e-payment as any exchange of funds initiated via an electronic communication channel, while (Gans and Scheelings, 1999) define e-payment as payments made through electronic signals linked directly to deposit or credit accounts. E-payment represents any kind of non-cash payment that does not involve a paper cheque (Hord, 2005). With the growth of e-commerce the importance of transferring money online has become an important issue to potential consumers. These e-payments systems can be classified commonly as direct online credit/debit payments, mediated credit/debit payments, stored-value money and electronic bill payments (Fazlollahi, 2002; Bitpipe, 2006). Lim et al.,(2006); Sumanjeet, (2009) refer e-payment to the transfer of an electronic value of payment from a payer to payee through an e-payment mechanism which allows customers to remotely access and manage their bank accounts and transactions, executed through an electronic network. Despite the increase usage of E-Payment by the consumers in general, the use of E-Payment among young adult is relatively low. As this group of consumers is forecast to be the heavy users of e-payment system in the near future due to their technology literacy and income levels, studies to understand young adult behavior towards e-payment system merit further investigation. One of the ways to encourage wider usage of E-Payment is to understand the perception of risks by the users, in turn the understanding will assist service providers and policy makers to offer better services and introduce policies to mitigate risks and exposures to risk (Hamid & Cheng, 2013). Interestingly, along with the IT adoption based – the perceived usefulness and the ease of use, the perceived risk and the trust have been the principal roles of the structural model of e–payment adoption. Although the perceived risk supported the direct relation with the e–payment adoption, which evidenced that the customers are not interested in the perceived usefulness; the ease of use and the trust not yet ready to use e–payments, because of perceived risk (Huynh, 2017).In comparison to the traditional

payment methods, e-payment techniques have several favorable characteristics, including security, reliability, scalability, anonymity, acceptability, privacy, efficiency, and convenience (Abrazhevich,2001). Andoh-Baidoo and Osatuyi, (2009) in their study illustrated that Nigerian banks are not taking advantage of the full spectrum of e-payment features because of some challenges especially inadequate power supply and telecommunication. Baten and Kamil, (2010) determined the economic prospects of e-banking as well as demonstrating the scope and benefits of e-payments in Bangladesh. Salehi and Alipour (2010) examined e-banking and e-payments in an emerging economy seeking to provide empirical evidence from Iran. As per the report of consulting firm Celent, India, indicates that, the value of retail E-payments in India has reached US $150 billion to US $180 billion by the end of 2010. It's difficult for the non-technical persons to comprehend risk, risk of spending and risk of theft. The knowledge of various factors influencing the adoption of payment systems from the citizen's perspective is crucial for developing countries and emerging markets like India to understand (Sivathanu, 2018). The degree of perceived control on transactions and the risk involved in online payment actually influence consumer's adoption behavior (Yang et al. 2015). Interestingly, along with the IT adoption based – the perceived usefulness and the ease of use, the perceived risk and the trust have been the principal roles of the structural model of e–payment adoption. Although the perceived risk supported the direct relation with the e–payment adoption, which evidenced that the customers are not interested in the perceived usefulness (e.g., don't improve payment efficiency, don't make transactions faster and easier); the ease of use (e.g., don't think e–payments is easy to understand and use); and the trust (e.g., don't convince when using e–payments) not yet ready to use e–payments, because perceived risk. (Huynh, 2017)

2.2. Perceived risk

The concept of perceived risk was originally proposed by Harvard's scholar (Bauer, 1964, 1967) in consumer behavior research. Formally, (Bauer, 1967) defined perceived risk as "a combination of uncertainty plus seriousness of outcome involved". In the context of online payment, we accept the definition of perceived risk given by (Featherman and Pavlou, 2003), ''the potential for loss in the pursuit of a desired outcome of using an e-service. Ho and Ng, (1994) investigated consumer risk perception of

electronic payment systems, which mainly involved the Electronic Fund Transfer (EFT) systems such as Point-of-Sales (POS) and Automatic Teller Machine (ATM). Considering the exogenous effect of perceived risk composed of behavior and environmental uncertainty, there exits two groups of risk: (1) system dependent uncertainty risk caused by functional defects, deposit costs or security problems in online payments and (2) transaction specific uncertainty risk caused by the conduct of different parties who are involved in the online transaction (Bélanger & Carter, 2008; Pavlou, 2003; Yousafzai et al., 2003). Basically, system dependent uncertainty risk is characterized as an exogenous variable because it is related to environmental uncertainty of the transaction and its unpredictable nature associated with unpredictable online payment technology, such as potential technological sources of errors, current limited functions, necessary time input and security gaps, which are all beyond the control of online payments servers or consumers (Bélanger & Carter, 2008; Pavlou, 2003; Yousafzai et al., 2003). However, transaction specific uncertainty is regarded as an endogenous variable, namely market uncertainty resulting from decisions of different parties caused by asymmetric information and an opportunistic manner among them by taking advantage of a distant and impersonal internet environment (Bélanger & Carter, 2008; Yousafzai et al., 2003).

Perceived risk is proved to be the key antecedent of intention and willingness to purchase over the Internet (Liu & Wei, 2003), and it also negatively influences consumer attitudes or intentions toward online transactions (Featherman et al., 2006; Forsythe & Shi, 2003; Pavlou, 2001). Many studies have tested the influence of perceived risk on various innovation adoptions, such as internet shopping (Forsythe and Shi (2003), e-services (Featherman and Pavlou, 2003), and electronic business (Kim et al., 2008). However, only a few are available about the sources of perceived risk. Mitchell, (1999) proposed that perceived risk is caused by certain types of uncertainties. Lim, (2003) suggested three sources of perceived risk, including technology, vendor, and product in e-commerce. Conchar et al., (2004) noted that the inherent uncertainty of a specific situation is the main source. It is also indicated that perceived uncertainty may possibly induce perceived risk in the online context (Pavlou et al., 2007). cyber law experts have cautioned that Indian consumers are complacent and have low awareness of online security risks

(Lakshmi, 2017). Li and Bai (2010) argued usability is the basic factor behind perceived risk in mobile banking. These studies just qualitatively provide some insights on the antecedents of perceived risk. Laroche et al. (2004) found that the intangibility of services substantially incurs consumer perceived risk. Mann and Sahni (2013) reported the negative influences of trust and loyalty on perceived risk in online banking. In another study, web site quality was found to be negatively related to perceived risk in the online shopping context (Kim and Lennon, 2013). However, limited knowledge is available on the determinants that have an incremental effect on perceived risk in the online payments context. Previous studies indicate that perceived risk is a multi-dimensional construct in e-commerce contexts (Featherman and Pavlou, 2003; Lim, 2003; Martins et al., 2014). According to (Park & Kim, 2003) there are other factors affecting consumers' adoption of technology, perceived risk is an impediment to the adoption of e-payment system.(Lie´bana-Cabanillas et al., 2017) propsed that there is existence of certain variables which have a special impact on the adoption of the proposed payment system. Perceived risk is closely related to payment systems. External influences have the greatest effect on intention to use, which suggests that it is the ultimate, decisive element in determining the acceptance of a payment system in an online environment. Thereafter, Jacoby and Kaplan (1972) inferred an overall measure of perceived risk from Bauer's seminal work (Bauer, 1967). Stone and Gronhaug (2007) reported that the former five to six factors could explain almost 88.8% of all perceived risk. Featherman and Pavlou (2003) reported the importance of privacy risk, overall risk, and Cunningham's (1967) five risks excluding physical risk by testing TAM in e-services. At the same time, Corbitt et al. (2003) also studied consumer risk perception considering performance, financial, social, psychological, and time risk, but regarded reliability, security, and privacy concern as technology trustworthiness. Yousafzai et al. (2003) discussed economic, personal, functional, and privacy risk related to transaction specific uncertainty in the concept model of e-trust for e-banking. Closely related to online payments, Cunningham et al. (2005) tested the original six facets of risk given by Cunningham (1967). Furthermore, the mentioned six facets of perceived risk were used to measure the overall risk between the UK and China (Veloutsou & Bian, 2008). Thus, the accountability of facets of perceived risk depends on the purchase behavior, situation, and even cultural differences, which

may vary depending on specific transactions and environments (Stone & Gronhaug, 2007; Veloutsou & Bian, 2008). In practice, online payments do not involve physical risk; hence, physical risk will not be considered as a risk factor in the following study. However, with the development of technology, the most important facet concerning consumer perceived risk has change (Yang et.al., 2015).

Facets of perceived risk are traceable to the research of (Cunningham, 1967), who first identified two categories of performance and psychosocial risk and further typified it with six dimensions: performance/functional, financial/economic, opportunity/time, safety/physical, social, and psychological loss.

Hence, we propose to adopt a six-dimensional model of perceived risk in online payment, including perceived financial risk, perceived performance risk, perceived security risk, perceived psychological risk, perceived time risk, perceived privacy risk, and which are consistent with the work of (Yang et.al., 2015).

2.3. Dimensions of Perceived risk

This present study shall investigate the impact of perceived risk upon adoption of online payment system based upon our proposed six dimensions model of perceived risk: financial risk, performance risk, security risk, psychological risk, time risk, privacy risk and the select review of literature on each of these six dimensions is presented below.

2.3.1. Financial risk:

A strong predictor that influences online shoppers' purchase intentions, searching information and frequent purchase activities was identified to be financial risk. Financial risk is defined as the probability of an internet shopper suffering monetary loss from a purchase when the product does not perform well or if the product is not worth the price paid (Featherman and Pavlou, 2003). Masoud (2013) found that any form of financial loss – either through credit card fraud, lesser quality or product that did not perform as expected – deters online shopping and has strong negative effects on online shopping intentions. Purchasing sensory products such as apparel via the internet is more risky as compared to the other goods such as books or computer software (Shim et al., 2000). It is difficult for consumers to evaluate and test apparel products via virtual stores (Brown and Rice, 2001). According to Almousa (2011) and Dai et al.

(2014), financial risk is one of the perceived risks that will negatively influence consumers' online purchase intentions for apparel. Financial risk is also indicated to be a strong forecaster of customers' online purchase intentions for apparel (Bhatnagar et al., 2000). In a similar study on retailers' private labels, the perceived financial risk by a customer is proposed to have a negative influence on their purchase intention as argued by Bhukya and Singh (2015). When consumers perceived higher levels of financial risk, they are less likely to shop via the internet and the total amount spent online or rate of searching with intention to buy will also be affected (Forsythe and Shi, 2003).

Financial risk pertains to the loss of money in the case of a poor product/ service choice. It is defined as the potential for monetary loss due to transaction error or bank account misuse. Financial loss means that the consumer cannot get a refund when needed or is not able to reverse the transaction or to stop payment after discovering the mistake. However, it does not include the loss of credit float when using cash or EFTPoS (electronic fund transfer at point -of-sales) (Jacoby and Kaplan, 1972 & Roselius, 1971). Perceived financial risk refers to consumer perception about the possible monetary loss caused by the usage of m-payment (Featherman & Pavlou, 2003). The transfer of money between accounts in m-payment may raise great concern about financial information, such as accounts and passwords being stolen and the subsequent the risk of losing money. M-payment usually applies wireless communication technologies that potentially keep the exposure of financial information to potential intruders. The current financial services research context expands this facet to include the recurring potential for financial loss due to fraud.

2.3.2. Performance risk

The risk that the online payments will not render the benefits as consumers expect due to limitations of the instrument and system (Yang et al. 2015). The possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits (Grewal et al., 1994).Performance risk is defined as the loss incurred when a product or brand does not perform as expected. This refers to losses incurred by deficiencies or malfunctions of online banking websites. The risk that a specific payment method cannot be used to complete a transaction when needed due to refusal

of acceptance or additional charges asked by the retailer. Perceived performance risk refers to user's perception about the possibility of the m-payment system malfunctioning and not working as intended or advertised, and thus being unable to provide the desired services (Featherman & Pavlou, 2003).

Besides, time-conscious consumers are likely to guard against the possible loss of time and performance risk because they chose online payment for its advantages of convenience and time-saving (Bellman et al., 1999; Featherman & Pavlou, 2003). However, to the group of people who spend most of their time on the Internet and would like to choose different channels of online payments, perception of performance risk is even more significant than time risk because consumers care more about stability and reliability of their online payment environment instead of time (Yang et al. 2015).

2.3.3. Security risk

(Yang et al. 2015) security risk is the risk that the system or software of e-banks and third parties is not stable or vulnerable to network attacks. Security is being defined as a threat which creates ''circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosure, modification of data, denial of service and/or fraud, waste, and abuse" (Kalakota and Whinston, 1997). Under this definition, in the context of online banking threats can be made either through network and data transaction attacks or through unauthorized access to the account by means of false or defective authentication. According to Milind (1999) security risk is a significant impediment to the adoption of online banking. Further, it has been stated in numerous studies that the greatest challenge to the electronic banking sector will be winning the trust of customers over the issues of privacy and security (Bestavros, 2000; Furnell and Karweni, 1999).

Lopez-Nicolas and Molina-Castillo (2008) suggested that technical risk, service risk, and delivery risk should also be considered in e-commerce. However, technical risk and delivery risk should be contained in security risk concerning money transfer safety in online payments. Phishing is a new crime skill by which phishers attempt to fraudulently acquire sensitive information, such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic communication (Reavley, 2005). Many consumers believe that they are vulnerable to identity theft while using online banking

services (Littler and Melanthiou, 2006). Consumers learn about the value of goods over the website features that offer product information quality, transaction and delivery capability and competent service quality. Nevertheless, without sufficient information of security tools in place, purchase intention will be discouraged. According to Karnik (2014), due to internet vendors existing globally, consumers' perceived risk toward online shopping has also increased, especially when they feel that internet security is inadequate. Security risk is defined as a potential loss due to online fraud or hacking, which exposes the security of an internet transaction or online user (Soltanpanah et al., 2012). Azizi and Javidani (2010) stated that security is linked with disclosure of financial information such as credit card number, account number and safe pin number. It is agreed that one of the barriers for online shopping is security fears (Teo, 2002). Though online shopping brings ease of purchase and usage to consumers, conversely, the absence of security mechanism will badly affect consumers' purchase intention (Tsai and Yeh, 2010; Karnik, 2014; Meskaran et al., 2013)

Martin and Camarero (2009) showed that customers avoid online shopping not because of inconvenience but because most customers are scared of losing their credit card information to credit card theft. Thus, they conclude that security risk has a significant influence on online shopping intention. Adnan (2014) suggested that privacy policies are needed to reduce security risk perceived by customers and thus enhance purchase intention of online apparel. Pallab (1996) stated that the internet has a low level of security that will make consumers worried to use their credit cards or disclose personal information. Consumers' sense of insecurity concerning online credit card usage was the major barrier to purchase online products (Maignan and Lukas, 1997).

2.3.4. Psychological risk

Psychological risk is acknowledged as the possible loss of self-respect due to the frustration of not attaining a purchasing goal (Stone and Grønhaug, 1993). Psychological risk may also be defined as a consumer's dissatisfaction in choosing a poor product or service despite having a huge array of varieties (Ueltschy et al., 2004). Psychological risk is associated with online purchase intention consumer perception on how his/her wrong judgment after making a wrong purchase leads to social risk, referring to

his perception of how others will react to his purchase. Moreover, consumers' contentment or satisfaction over defective products can cause a negative effect (Jacoby and Kaplan, 1972). Mayer et al. (1995) refer to consumer trust as representative of trusting beliefs and attitudes in online payments with a specific definition as follows: ''a psychological state leading to the willingness of customers to perform payment transaction over the internet and expect the payment platform fulfilling its obligations, irrespective of customer's ability to monitor or control payment platform's actions". Possible regrets and frustration may result in consumers experiencing mental pressure in the future due to their purchased decisions that did not meet their expectations. The uncertainty or stress may be the reason for psychological risk occurring and affecting their purchase decision.

Perceived psychological risk refers to consumer's perception of any possible psychological frustration, pressure, or anxiety resulting from the use of m-payment (Lim, 2003). M-payment is a relatively new and complicated service compared with wired internet payment or credit-card payment. Thus, users may be unable to operate the software successfully, which can induce psychological pressure. Additionally, the difficulty of keeping payment evidence in cell phones and their wireless characteristics may induce anxiety in general users if a transaction is not successful. The risk that the uncertainty of other risks will affect the consumers' mood or cause anxiety (Yang et al. 2015). Psychological may still play a role in the context of online payment, but their effect will decrease due to the digressive marginal utility.

2.3.5. Time risk

Time risk is one of the influential factors on consumers' purchasing behavior via the internet (Zhang et al., 2012; ye, 2004). Time risk comprises the troublesome experience through online transactions that are often caused by the struggle of navigation and/or submitting the orders and delays of getting the products (Forsythe et al., 2006).Time risk also includes when products did not meet consumers' expectation levels and consumers have to return the product for a new replacement (Ariff et al., 2014). The risk of time wasting in application, learning and waiting for the completion of the entire online payment process (Yang et al. 2015).

It may also be related to the length of time involved in waiting the website or learning how to operate online banking website. The risk that a specific payment method will take up more time to complete a transaction than paying by other means. It does not include the time spent after use of EFTPoS (e.g. checking extra payment items in account statements) as these are rather minimal and controllable. Perceived time risk refers to any possible time loss due to the usage of m-payment. This may result from uncertainties about the time required to learn how to operate the software, which procedures to follow when failing to pay bills, or how to delete mobile apps when their performance is below expectations (Featherman & Pavlou, 2003). It is the case that the mobile apps do not always process payments smoothly due to availability, loading speed, responsiveness, and the processing ability of networks and terminals. This may result in inconvenience for a consumer if it takes a long time to process a transaction. Besides, time-conscious consumers are likely to guard against the possible loss of time because they chose online payment for its advantages of convenience and time-saving (Bellman et al., 1999; Featherman & Pavlou, 2003). Steven et al. (1999) reported on the importance of time considerations and found that it was a significant predictor of online buying behavior. Their research found that ‘‘harried’’ consumers were more likely to purchase over the Internet in order to save time. These time-conscious consumers likely guard against the possible loss of time risk, and are less likely to adopt an e-service that they consider to have high switching, setup and maintenance costs (Featherman & Pavlou, 2003).

2.3.6. Privacy risk

Privacy is another major consumer concern in m-payment adoption because much private information, like phone numbers, social security numbers, pin code, consumption locations, shopping records, etc., is required in the m-payment process. Such information could be exposed or maliciously used if it fell into the wrong hands. The perception of the possible exposure of a user’s private information is termed perceived privacy risk (Featherman & Pavlou, 2003). Featherman & Pavlou (2003) reported the importance of privacy risk by testing TAM in e-services. According to (Yang et al. 2015) privacy risk is the risk of disclosure of consumer’s private information due to carelessness or illegal activities of banks, third parties or others. The potential violations of a consumer’s privacy information include service

providers intentionally collecting, disclosing, transmitting, or selling personal data without a consumer's knowledge or permission or hackers intercepting such information. Potential loss of control over personal information, such as when information about you is used without your knowledge or permission. The extreme case is where a consumer is ''spoofed'' meaning a criminal uses their identity to perform fraudulent transactions.

2.4. Motivation

Motivation theorists suggest that motivation is the driving force by which humans achieve their goals. Motivation includes intrinsic and extrinsic motivations. Extrinsic motivation refers to motivation that comes from outside an individual. Specifically, extrinsic motivation drives an individual to do things for external rewards (such as money, grades, or prizes) or pressures (such as threat of punishment), rather than for the fun of it. In contrast, intrinsic motivation refers to motivation that is driven by an interest or enjoyment in the task itself, and comes from inside an individual rather than from any external or outside rewards. Some prior studies have found that intrinsic and extrinsic motivations are determinants of IT use (e.g., Shin, 2009; Teo, Lim, & Lai, 1999). Similarly, previous research also contends that both utilitarian and hedonic motivations influence the decision-making behavior of consumers (e.g., ; Childers, Carr, Peck, & Carson, 2001; Dhar & Wertenbroch, 2000; To, Liao, & Lin, 2007). The main finding from Tauber`s research was that people do not only shop for the use of the purchased item but also for the satisfaction obtained during the process. This brought rise to the theory of utilitarian and hedonic motivation which tries to explain why people shop. Hirschman and Holbrook (1982) extend this idea by including factors that are related to the hedonic motivation such as aesthetic s, e motion and enjoyment and compare them to utilitarian shopping motivations.

2.4.1. Hedonic motivation

Hedonic outcome is an attribute that is regarded as the intrinsic value that makes the customers to be cognitively absorbed or attached to the online platform (Weniger& Loebbecke, 2011). This is attributed to the fact that an enjoyable experience and fun in using a technological based service does motivate users. Additionally, hedonic motivation (such as enjoyment) has been found as an important driver of

technologies adoption since it helps to trigger positive attitude among users (Huang, 2015, Poong, et al, 2016). As defined, hedonic motivation is 'the fun or pleasure derived from using a technology' (Venkatesh et al., 2012) without any specific extra benefit (Davis, et al., 1992). Moon and Kim (2001) assert that perceived fun has three components of curiosity, enjoyment and fun and would positively attract the users to the platform. In the consumer context, hedonic motivation has also been found to be an important determinant of technology acceptance and use (e.g., Brown & Venkatesh 2005; Childers et al. 2001). Several studies on online banking have confirmed the positive relationship between hedonic motivation otherwise known as perceived enjoyment or fun and adoption of online banking (Amin, et al., 2012; Suki, 2010).

Derived from flow theory, perceived enjoyment refers to the extent to which using a given a technology is perceived to be personally enjoyable in its own right—aside from any instrumental benefits to be derived from using the technology (Lowry et al., 2013). Researchers have suggested that consumers adopt new technologies not just as devices to enhance performance but also as sources of enjoyment. Hedonic motivation has been conceptualized as 'perceived enjoyment' in the literature, and found to be a significant predictor of consumers' technology acceptance (Venkatesh et al., 2012), Internet usage (Teo, Lim, & Lai, 1999) and an evaluatory component of online browsing (Cox, Cox, & Anderson, 2005).

2.4.2. Utilitarian motivation

Utilitarian motivation is defined as mission critical, rational, decision effective, and goal oriented (To et al., 2007). Previous research suggests that shopping experiences can provide consumers with a combination of utilitarian and hedonic shopping values (e.g., Babin & Darden, 1995; Babin, Darden, & Griffin, 1994; Carpenter & Moore, 2009; Chandon, Wansink, &Laurent, 2000; Holbrook, 1994; Jones, Reynolds, & Arnold, 2006; Klein & Ford, 2003). Consumers perceive utilitarian value through acquiring the product(s) that necessitated the shopping trip and can simultaneously perceive hedonic value associated with the enjoyment of the shopping experience itself (Carpenter, 2008; Carpenter & Moore, 2009). Hedonic systems and utilitarian systems have different functions, that is, prolonged use for hedonic systems and productive use for utilitarian systems; as such, it has been proposed and empirically proven

that utilitarian motivators like perceived usefulness play greater role for utilitarian systems (Ayyagari, 2006; van der Heijden, 2004).

Researchers argue that the adoption of technology in general is determined by utilitarian influence factors like Perceived Usefulness and Perceived Ease of Use based on the Technology Acceptance Model (TAM) (Davis, 1989; Venkatesh and Bala, 2008). Additionally, it has been shown that the adoption of technology can be better explained when integrating hedonic influence factors like Perceived Enjoyment (Agarwal and Karahanna, 2000; Dabholkar, 1996; van der Heijden, 2004; Venkatesh., 2000; Venkatesh et al., 2012). For using SST(self-service technologies), research has already explored utilitarian motivations such as time savings, reliability, and increased control (Alreck and Settle, 2002; Curran and Meuter, 2007; Dabholkar, 1996; Dabholkar et al., 2003; Davis et al., 1989; Meuter et al., 2000). Combining both views, we believe that SST are dual technologies with both utilitarian and hedonic motivations. Additionally, prior studies in other contexts have shown that the factors that motivate initial or repeat purchase intention are quite different, depending on prior experience (e.g., initial purchase vs. repeat purchase) (Cheung et al., 2003; Kim and Gupta, 2009; Parasuraman, 1997; van der Heijden et al., 2003). Human motivations, cognitive (utilitarian) as well as affective (hedonic), are aimed primarily at individual gratification and satisfaction (McGuire, 1974), which provides the theoretical basis for explaining why people engage in SST. The terms ‘‘hedonic” and ‘‘utilitarian” are applied not only to motivations, but to systems and aspects of experience. Flow, ‘‘the state in which people are so involved in an activity that nothing else seems to matter” (Csikszentmihalyi, 1990), has been used to explore users’ responses to technology, as well as task and situational factors that motivate use (Finneran and Zhang, 2003; Konradt and Sulz, 2001).

2.5 Problem statement

The review of literature has been made to identify the various gaps in the existing studies. The extent of literature reviewed in this study, emphasizes on the wide gap existing in the studies in context of impact of perceived risk on consumer adoption towards online payment system and moderating role of hedonic and utilitarian motivation, furthering the strength of relationship between perceived risks upon adoption of online payment system. The online payments in India had shown exponential growth after demonetization.

But still the larger quantum of population of India knows little about online payment system and their utilities resulting in lower penetration of online payment transactions volume. Consequently Only 3% of the population in India used the internet to pay utility bills in the year 2017. Thus, the scope for greater adoption of online payments systems appears to appropriate in every sphere of human as well as commercial activities (Reserve Bank of India, 2019). There are some factors which work as a barrier in the adoption of online payments. According to (Park & Kim, 2003) there are other factors affecting consumers' adoption of technology, perceived risk is an impediment to the adoption of e-payment system. There are many researches on perceived risk worldwide. Many researchers had talked about perceived risk in respect of online banking, mobile payments, online shopping and online payments etc.. There is a limited research in Indian context who observe the relation between the consumers perceived risk and online payments in Indian context. The researcher want to fill that gap by observing the impact of perceive risk on consumer towards adoption online payments in Indian context and to fill this gap up to certain level by this study.

Secondly, previous studies had observed the impact of hedonic motivation i.e. perceived enjoyment on online payments. Considering all consumer motivations in systems such as electronic payments systems (EPS) to make them more enjoyable and motivating (Rouibah et al.2016). Venkatesh et al. (2012,) included hedonic motivation in UTAUT (Unified theory of acceptance and use of technology) and defined it as 'the fun or pleasure derived from using a technology'. Hedonic motivation has been conceptualized as 'perceived enjoyment' in the literature, and found to be a significant predictor of consumers' technology acceptance (Venkatesh et al., 2012), Internet usage (Teo, Lim, & Lai, 1999) and an evaluatory component of online browsing (Cox, Cox, & Anderson, 2005). So this study including the hedonic motivation and utilitarian motivation to see their moderating effect on relationship between perceived risk and online payment system. Higher levels of perceived enjoyment in using a new technology may lead to a decrease in anxiety, worry or concern, in turn lowering perceived risk (Koenig-Lewis et al., 2015) .However to our best knowledge there is no research which is talked about role of utilitarian motivation in online payments perspective. So this could be the contributing factor of the study.

The research gap raises these research questions which will be answer though this research:

1. Which risk dimensions mostly affect the consumer's adoption of online payment system?

2. How does consumer perceived risk affect consumer adoption of online payment system?

3. What is the impact of demographic variables on relationship between perceived risk and consumer adoption towards online payment system?

4. What is the moderating effect of motivation on the relationship between perceived risk and online payment system?

3. Need of the study

Online payment system is becoming a viable preference to consumers as the internet has becoming essential tool for communication and business worldwide. The Internet World Stats (2018) reported that there are more than four billion internet users in 2017, and it is a 577 per cent growth as compared to the total population of internet users in year 2000. The Asian region conquers 49.2 per cent of the total number of internet users. In 2017, an estimated 1.66 billion people worldwide purchased goods online; the total number of internet users had triggered $2.3tn of the sales from the internet, and projections show a growth of up to $4.48tn by 2021 (Statista, 2018), representing a drastic increase in online shopping (Paynter and Lim, 2001), Which indirectly increase the usage of the online payments by the consumers to pay for their shopping electronically.

There are many benefits for the people to do transactions through online payments systems. It saves the time, transaction cost of consumers as compared to traditional modes of payments but still some people are not stepping towards online payments systems. After analyzing various reviews it has been noticed that most of the researches have mainly concentrated on intention to use, customers' acceptance in online payments. There is a paucity of researches which can find out the relationship between perceived risk variables and online payments system in Indian context. Whether and how fun, pleasure, enjoyment i.e. hedonic motivation and achievement, effectiveness i.e. utilitarian motivation affects the relationship between perceived risk and online payments is yet to be examined deeply. Furthermore, on detailed search the researchers have found only little literature available in the Indian context dealing with adoption and

the various components of the same. From literature study it can be seen that all these studies have been done in non-Indian context and particularly focus on intention to use. Through this research, the researchers look forward to find the different ways in which researcher can bring positive perception towards the minds of their online consumers, in Indian context.

Many researches had talk about impact of consumer perceived risk in online shopping, online banking, and mobile payments. But there are a few researches on online payments system in Indian context. In this study researcher want to see the impact of variables of consumer perceived risk on adoption of online payment system in Indian context it helps to find out the most influential risk factors on adoption of consumers and which factors mostly affecting the decision of consumers regarding online payment system. The motivation in people helps them to fight over there fears. Motivation inspires the people towards their completion of job or task. Chiu et al. 2012 suggests that consumer risk perceptions need to be reduced to an acceptable level for a desirable, combined effect of utilitarian and hedonic benefits to be realized. The findings suggest that the impact of utilitarian and hedonic values outweighs the perceived risks. Previous studies on perceived risk mainly focus on the impact of hedonic motivation on trust formation and intention to use online payment systems (Rouibah, Lowry, & Hwang, 2016).

So the current study wants to shift the focus of online payments motivation to include both hedonic and utilitarian viewpoints. Thus, this study investigates the moderating role of utilitarian motivation and as well of hedonic motivation in relationship between perceived risk and online payment system. This could be a contributing factor for the stakeholders involved in online payments like banks, merchants, companies to modify their promotion campaigns and policies for promoting online payments in consumers by keeping in mind these risk factors and motivation factors. Also the study intending to assess the significance of demographic attributes on relationship between perceived risk and online payment systems adoption of consumers.

4. Objectives of the Study

The proposed study shall seek to achieve the following objectives:

1. To identify key dimensions of perceived risk influencing consumer adoption towards online payment system.

2. To examine the relationship between the perceived risks and consumers adoption towards online payment system.

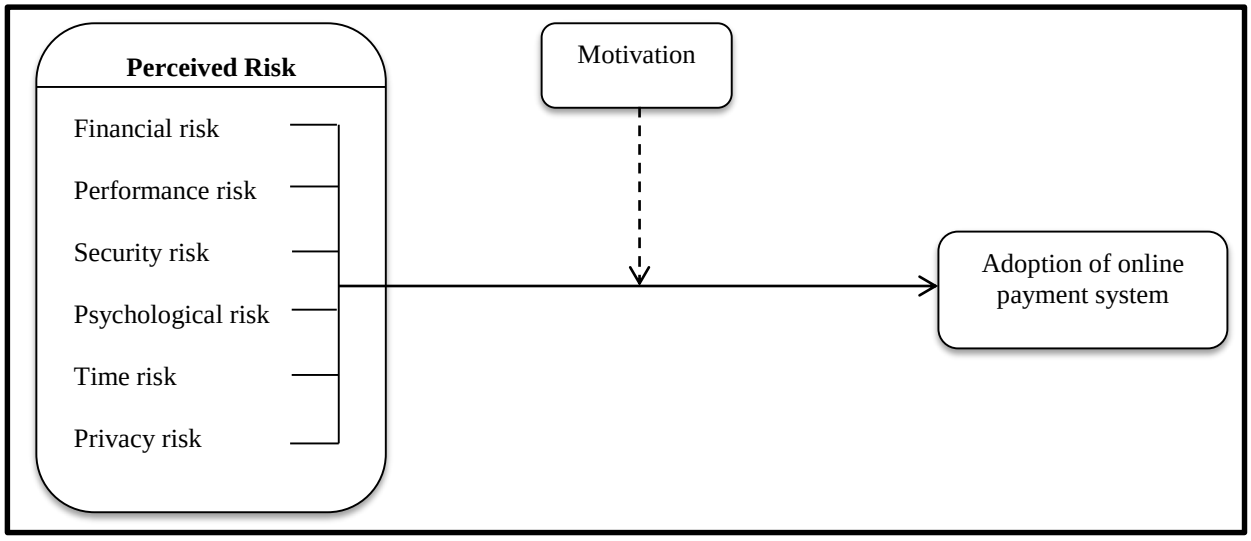
3. To assess the impact of demographic variables on relationship between perceived risk and consumer adoption towards online payment system.

4. To measure the moderating effect of motivation on relationship of perceived risk and consumer adoption towards online payment system.

5. Conceptual framework and Hypotheses

The hypotheses of the study are based on the conceptual framework as shown in 5.1. The framework represents relationship between various dimensions of perceived risk and adoption of online payments. In the proposed research, the researcher will carry out the research on the basis of the suggested framework as presented in figure below. motivation will be used as moderator. The model will examine the impact of dimensions of perceived risk on consumer adoption towards online payments.

5.1. Conceptual framework



Source: Author's Compilation

5.2 Hypotheses:

The study will be carried out in order to test the following hypotheses. The hypotheses for the present study are formed on the basis of previous studies and relevant literature.

5.2.1. Financial risk and online payment system

According to Kuisma et al. (2007), many customers are afraid of losing money while performing transactions or transferring money over the Internet. According to Almousa (2011) and Dai et al. (2014), financial risk is one of the perceived risks that will negatively influence consumers' online purchase intentions for apparel. Financial risk is the strongest negative factor hindering the consumer acceptance of m-payment.(Yang et al., 2015). Therefore, it is hypothesized that:

H_1: Financial risk has a significant effect on consumer adoption towards online payment system.

5.2.2. Performance risk and online payment system

Customers are often apprehensive that a breakdown of system servers or disconnection from the Internet will occur while conducting online transactions because these situations may result in unexpected losses (Kuisma et al., 2007). According to Yiu et al. (2007), sudden breakdown of web servers may lead to unexpected losses while conducting online transactions. Perceived performance risk is negative construct influencing both perceived value and acceptance intention, and has a greater hindering effect on perceived value than behavioral intention. (Yang et al., 2015). performance risks emerged as negative factors in the intention to adopt online banking. (Lee, 2009) Therefore, it is hypothesized that:

H_2: Performance risk has a significant effect on consumer adoption towards online payment system.

5.2.3. Security risk and online payment system

In the early stage of online payment, reliability or function of the network is the most important concern for consumers. When financial data is transmitted over the internet, there are risks that unauthorized parties could intercept the information and cause economic loss, making the economic and security risk as

very important perceived risk factors in online payments. A study by Thompson and Liu (2007) also found that there is a significant relationship between security risks and intention to purchase online. Giovanis et. al. (2012) found positive relationship between privacy risk/security and online banking adoption. The issue of security risk is important factors in e-payments adoption (Okeke & Chukwuemezie, 2013). Therefore it is hypothesized that:

H_3: Security risk has a significant effect on consumer adoption towards online payment system.

5.2.4. Psychological risk and online payment system

As suggested by Bhukya and Singh (2015), to increase a customer purchase intention, the psychological risk has to be minimized significantly. In addition, psychological risks are negatively related to consumers' purchase intentions toward Taobao, a Chinese online marketplace, as supported by Han and Kim (2017). perceived psychological risk and perceived time risk were found to have no effect on perceived value and acceptance intention. (Yang et al., 2015) Therefore, it is hypothesized that:

H_4: Psychological risk has a significant effect on consumer adoption towards online payment system.

5.2.5. Time risk and online payment system

It may refer to the loss of the time and inconvenience incurred due to the delays of receiving the payment or the difficulty of navigation (finding appropriate services and hyperlinks). Two leading causes of dissatisfying online experiences that may be thought of as a time risk include a disorganized or confusing Web site and pages that are too slow to download (Forsythe and Shi, 2003). Forsythe and Shi (2003) indicated that time risk is a significant barrier to online shopping. perceived time risks were found to have positive attitude about m-payment (Yang et al., 2015). (Lee, 2009) found that the time risk to has a negative influence on attitudes towards the intention to adopt online banking. Therefore, it is hypothesized that:

H_5: Time risk has a significant effect on consumer adoption towards online payment system.

5.2.6. Privacy risk and online payment system

Dinev and Hart (2006) gave us the evidence that perceived privacy risk also had negative impacts on e-trust in e-transactions. These factors are resources of risk which may cause consumer loss. Perceived privacy risk has a salient impact on acceptance intention, but no influence on perceived value, which means that when consumers make a decision about whether to adopt m-payment, privacy considerations make a difference, but do not influence their perception of the value of m-payment. (Yang et al., 2015). Therefore, it is hypothesized that:

H_6: Privacy risk has a significant effect on consumer adoption towards online payment system.

5.2.7. Moderating role of motivation on relationship between consumers perceived risk and consumer adoption towards online payment system.

The importance of hedonism has been acknowledged especially with frustration that almost dominates online activities. This feature is recognized to have positive and significant effect on the adoption of e-banking and other similar online services (Chemingui & Llalouna, 2013; Pikkarainen et al, 2004). Other studies indicate that infusion of fun attributes is not significant and could create confusion for the users (Hojjatti & Rabi, 2013; Ndubisi & Sinti, 2006). Higher levels of perceived enjoyment in using a new technology may lead to a decrease in anxiety, worry or concern, in turn lowering perceived risk. Therefore, it is hypothesized that:

H_7: Motivation moderates the effect of perceived risk on consumer adoption towards online payment system.

6. Overview of proposed research

6.1. Scope of Study

The scope of the study will be bounded to consumers of Agra city and Delhi-NCR. The reason for choosing this geographical area is because these are two major cities of northern India.

According to the **New Indian Express** report says in urban India internet penetration is about 64.85%.Online transactions, e-commerce activities, digital payments etc. is low in rural areas compared to urban areas because of poor network quality, not able to buy internet packs and lack of electricity. 44% users use the internet for transactions in the urban area (e-market edu).With 50% growth; Delhi however registered the highest growth of internet users among all the top cities in India (IAMAI). As per the 'Digital Payments Report' for 2018, Delhi is on 4th place and Uttar Pradesh is on 7th place among top 10 states in digital transactions in India. Agra is one of the most populous city of Uttar Pradesh. So the difference in responses of respondents from two different geographical area, one is metro and other is comes under tier-1 cities of Uttar Pradesh help to the collect the data which gives efficient results for the results required under this research.

6.2. Sources of data collection

Primary data

The tools used for the purpose of primary data collection will be Questionnaires. Structured Questionnaire will be administered in order collect data from the respondents. The Questionnaire will be distributed offline as well as online to the consumers which use online payment system as mode of payment.

Secondary data

Data will be collected through various magazines, newspapers, internet and libraries, Website, Books, Journals, Blogs, Other published and unpublished sources for collection of secondary data.

6.3. Statistical Tools

To test the proposed relationships, data will be analyzed using statistical tools like, Descriptive Analysis, Correlation Analysis, ANOVA (Analysis Of Variance), Regression Analysis, Reliability and Validity etc.

6.4. Sample composition

The information of the study collected from all those individuals who use online payments system as a mode of payment.

6.5. Sampling Techniques

Purposive Sampling and snowball sampling Method will be used to draw representative samples from the population for the study.

6.6. Sample Size

Taking a statistical approach for calculation of sample size, the various quantitative measures to be considered while determining the sample size are as follows:

1. Variability of population characteristics or standard deviation (σ)

2. Level of confidence desired or Z value (taken as 1.96 for 95% confidence level desired)

3. Degree of precision desired in estimating population characteristics (D)

$$\mathbf{n_0 = \sigma^2 . Z^2/D^2}$$

Where, $n0$ = sample size

σ = Standard Deviation

Z = Standard normal variate for 95% confidence level and,

D = Degree of precision desired

Table 1: Comparative Analysis Taking Different Values of σ and D.

	$\boldsymbol{\sigma}$	**Z**	**D**	$\boldsymbol{n0}$
Scenario 1	0.6	1.96	0.05	553
Scenario 2	0.5	1.96	0.06	267
Scenario 3	0.4	1.96	0.07	125
Total				**945**
Average				**315**

In order to obtain a representative and realistic sample size, the results of sample size from 3 scenarios are compared;

Scenario 1: Estimating a high standard deviation and low degree of precision.

Scenario 2: Estimating a moderate standard deviation and moderate degree of precision.

Scenario 3: Estimating a low standard deviation and high degree of precision.

The results are summarized in Table 1. Taking an average of the all the three scenarios, considered taking different values of σ and D, the sample size computed for the study is **315** at 95% confidence level.

6. Proposed Chapterization

The structure of proposed research will be as follows:

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Research Methodology

Chapter 4: Analysis and Results

Chapter 5: Conclusion and Directions for Future Research

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Appendices

Appendices 1 : LITERATURE REVIEW SYNTHESIZED MATRIX

s.no.	Author	Financial risk	Performance risk	Security risk	Psychological risk	Time risk	Privacy risk	Hedonic motivation	Utilitarian motivation	Online payment system
1	Alexandra et al.(2015)							✓	✓	
2	Anderson et al.(2014)							✓	✓	
3	Bhukya &Singh (2015)	✓	✓		✓		✓	✓	✓	
4	Chiu et al.(2012)	✓	✓				✓	✓	✓	
5	Dennis(2001)									✓
6	Featherman & Pavlou(2003)	✓	✓		✓	✓	✓			
7	Hamid & Cheng(2013)	✓	✓		✓	✓				✓
8	Ho & Ng(1994)	✓	✓		✓	✓				✓
9	Kim & Lennon(2013)			✓			✓			
10	Kim et al.(2010)									✓
11	Koenig-Lewis et al.(2015)							✓		
12	Lee(2009)	✓	✓	✓		✓	✓			
13	Lin et al.(2012)							✓	✓	
14	Lok(2015)									✓
15	Martínez-López et al.(2014)								✓	
16	O'Brien & Lynn(2010)							✓	✓	
17	Okeke & Chukwuemezie(2013)	✓			✓	✓				✓
18	Özkan & Hackney(2010)	✓					✓			✓
19	Pikkarainen et al.(2004)							✓		
20	Rouibah et al.(2016)	✓						✓		✓
21	Roy & Sinha(2014)			✓			✓			✓

22	Salimon et al.(2017)							✓		
23	Sarkar & Abhigyan(2011)	✓	✓					✓	✓	
24	Teoh et al.(2013)									✓
25	To et al.(2007)							✓	✓	
26	Venkatesh et al.(2012)							✓	✓	
27	Voss et al.(2003)							✓	✓	
28	Yang et al.(2015a)	✓	✓	✓	✓	✓	✓			✓
29	Yang et al.(2015b)	✓	✓		✓	✓	✓			